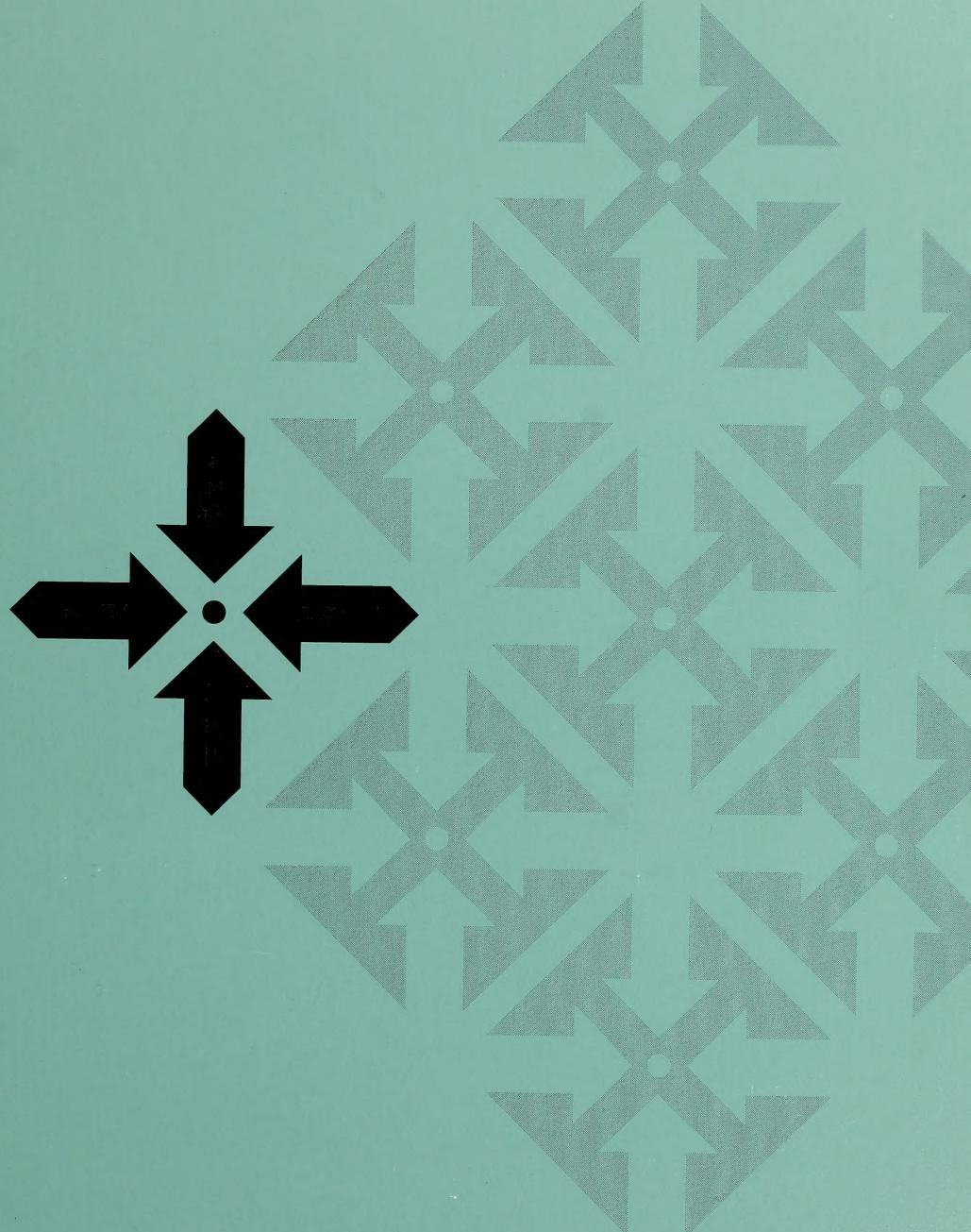


## MANUFACTURING

## Operating a Small Manufacturing Business



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ECONOMIC DEVELOPMENT  
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FOCUS ON BUSINESS



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JUL - 5 1993

## Operating a Small Manufacturing Business

By: John C. H. Smith, C.P.A., C.M.A.

Small manufacturing business owners are often faced with the challenge of balancing the need to increase production with the need to control costs. This article provides some tips on how to do both effectively.

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**1993 Edition**



# Operating a Small Manufacturing Business

## *Foreword*

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The information in this book is neither an exhaustive review of business planning needs nor a substitute for advice from professional advisors.

About 70% of Alberta's manufacturing production takes place in Calgary and Edmonton. Other centres such as Lethbridge, Medicine Hat/Redcliff and Red Deer are also industrialized. Rural communities account for 13% of production.

The first major manufacturing developments in Alberta resulted from the development of natural resources. Today, there is a trend towards production of a broad range of finished consumer goods. Much of this new manufacturing depends on the development of both domestic and export markets.

When expanding or establishing a business, whether it be retail, service or manufacturing, the task is often difficult and time consuming. While large firms have more personnel and management expertise, managers of small manufacturing enterprises wear many hats. They develop expertise in finance, production, marketing, purchasing, design, plant layout and labour relations. Starting a business also requires a personal commitment of time and financial resources.

Covering all aspects of manufacturing in this handbook would be impossible. So the publication is aimed at the small manufacturer and provides only basic manufacturing advice. While the basic principles also apply to a custom shop with small production runs, the main difference is found in higher unit costs. In a small business the more you do yourself, the more you know about your business, and the better your chance of success. This handbook is designed to provide a simple framework which you can use to build a workable plan.

The material that follows is a general guide for entrepreneurs. Every effort has been made to ensure the information is correct and current; however, all information is subject to change. It has also been presented in a generalized form. Unique situations have not been identified. The information should therefore be used only as an introduction to the needs and requirements of your business.

Depending upon your particular situation, the action you take should be initiated after consulting the appropriate business management consultants, accountants, lawyers, or industrial associations, etc. They will provide the specific advice necessary for your particular circumstance and responsibilities.

The Business Counselling and Development Branch of Economic Development and Tourism offers professional counselling services in such areas as manufacturing, marketing, merchandising, and financing. Professional counsellors are located throughout the province and are available to assist you with simple, straightforward advice. This service is provided at no cost to small business people who want help "to help themselves".

*Operating a Small Manufacturing Business* is one of a series of booklets published by Alberta Economic Development and Tourism. Other booklets that may be useful are:

- *Starting a Small Business*
- *Financing a Small Business*
- *Marketing for a Small Business*
- *Operating a Small Business*
- *Operating a Small Service Business*
- *Bookkeeping for a Small Business*

These publications are available at all Alberta Economic Development and Tourism offices and Alberta Treasury Branches listed in the back of this publication.

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# A Business Plan

## *Chapter One*

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Today, technology and the market place have become more complex than ever before. Common sense is still important, but it is now only one of the keys to success. Common sense must be combined with new techniques in order to succeed in the modern world.

The business plan is an indispensable tool for the owner/manager of a small manufacturing business. It is actually a logical progression from a common sense starting point to common sense goals.

To build a business plan for your company, you need to think and react as a manager. Answer the following questions:

- What product is to be manufactured?
- Is there a need for the product?
- Are there similar products on the market?
- How can it best be made?
- What will it cost?
- Who will buy the product?
- What profit can be made?
- Is the return on investment adequate?

### ***What Business Am I In?***

The first question for you is: What business am I really in? When you first ask this question, it may seem too simple. You are probably 100% sure you know your business. However, some owner/managers go broke and some waste their time and savings because they are not sure what business they are really pursuing.

The following questions may help you to decide what business you are in and may help direct you to new lines or new business:

- What does the product do for the customer?
- Why?
- When?
- Where?
- How?
- What doesn't it do?
- What should it do later that it doesn't do now?

This is a fundamental area. The time spent developing a good understanding of your product and business now will be of great benefit when developing your new business plan.

# How to Get Started

## Chapter Two

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A brief overview of your legal obligations will be helpful. After deciding what business you are getting into, you must develop an action plan. Answer the following questions:

- What type of business structure do I want; a limited company or a proprietorship?
- What licenses or permits will I need?
- If I employ others, what are my responsibilities?

The handbook *Starting a Small Business*, is available without charge from Alberta Economic Development and Tourism. It describes the types of business formations, licenses, permits, taxes, employer responsibilities and employee deductions.

The following section offers a very brief introduction to legal requirements for manufacturers.

### **Business Organization**

The simplest form of business organization is a proprietorship. One person performs all the functions that are required for the successful operation of the business.

A partnership of two or more people is an intermediate form of business organization, more complex than an individual proprietorship but less complex than a limited company.

Sole proprietorships and partnerships must register their business name with Corporate Registry (see below).

A limited company is a legal entity, distinct and separate from its shareholders, officers and directors. If you set up a limited company or corporation contact:

**Corporate Registry**  
**Alberta Consumer and Corporate Affairs**

8th Floor, John E. Brownlee Bldg.  
10365 - 97 Street  
Edmonton, Alberta  
T5J 3W7  
Phone. 427-2311

3rd Floor, Canada Place  
407 - 2nd Street S.W  
Calgary, Alberta  
T2P 2Y3  
Phone: 297-3442

**Licenses** Some manufactures may require a provincial business license. The handbook *Starting a Small Business* lists the types of businesses and the related government departments or contact:

**Licensing Branch**  
**Alberta Consumer and Corporate Affairs**

3rd Floor, Capilano Centre 9945 - 50 Street Edmonton, Alberta T6A 0L8 Phone: 422-2590	#301, Centre 70 7015 Macleod Trail South Box 5880, Station A Calgary, Alberta T2H 2M9 Phone: 297-5700
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Each local government in Alberta has the authority to issue its own business licenses within its jurisdiction. Most cities, towns or municipal districts do license manufacturers and should be contacted at the outset. In Calgary, contact the City of Calgary License Division and in Edmonton, contact the City's License Branch and Planning Department.

In addition, the federal government requires manufacturers to register for GST. They may also be required to obtain an excise tax license for particular types of manufactured goods.

**Excise Tax Brief:**

- Excise tax is applied on the selling price of goods such as jewellery, cigarettes, tobacco, wines, and watches. For a complete list contact a District excise office.
- Manufacturers of excisable goods with sales revenue under \$50,000 per year do not require an excise tax license.
- Manufacturers who exceed the \$50,000 limit part way through the year are required to apply for a license as soon as the sales exceed the limit or when it becomes evident that sales will exceed the limit.

All enquiries concerning federal excise tax licenses should be directed to:

**Revenue Canada - Taxation**

District Excise Office 15th Flr. Park Square 10001 Bellamy Hill Edmonton, Alberta T5J 4P5 Phone: 497-6300 or 1-800-661-0005	Regional Excise Office P.O. Box 2525, Station M Calgary, Alberta T2P 3B7 Phone: 292-5678
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**GST Brief:**

- Business owners have to register if their revenues exceed \$30,000 per year.
- Businesses file a monthly GST return, quarterly or annually; however if revenues exceed \$6 million they must file monthly.
- Registering for GST allows businesses to get a credit to recover GST they pay on services, material and supplies used to manufacture a final product.

- GST requires that a business GST registration number and other information must appear on all sales receipts and invoices.
- A number of goods (i.e. groceries) or services are exempt, or zero-rated under the Excise Tax Act. Businesses should consult their local branch of Revenue Canada to determine what goods or services are subject to the GST:

	Local	Long Distance
Edmonton:	421-8100	1-800-661-0005
Calgary:	292-6990	1-800-661-0005

## ***Employers' Responsibilities***

Some of the other obligations of the owner/manager of a small manufacturing business are:

- All businesses employing more than five people must form an “employer group” and deduct medicare premiums from payrolls. Contact the Alberta Health Care Insurance Commission.
- Almost all manufacturing businesses must cover workers’ compensation for employees. Contact the Workers’ Compensation Board.
- Businesses must ensure, as much as reasonably possible, the health and safety of their employees by preventing occupational injury and illness and providing adequate protection. Contact Alberta Occupational Health and Safety.
- Employers must deduct unemployment insurance premiums, Canada Pension Plan contributions and personal income tax from employees’ salaries or wages on behalf of the government. Contact Revenue Canada - Taxation.
- Employers must comply with the laws regulating employment such as minimum wage, vacation pay, maternity leave, hours of work, overtime, etc. Contact the Employment Standards Branch of Alberta Labour.
- Employers must pay business income taxes. Contact Revenue Canada - Taxation.
- Businesses must register for GST.

Please refer to the *Starting a Small Business* handbook for the appropriate contacts and further details.

## ***Importing***

Since importing regulations are complex, contact Revenue Canada - Customs Operations for information. They have offices in Edmonton, Calgary, Lethbridge and Medicine Hat.

## ***Insurance***

Insurance needs for small manufacturers vary greatly. Choose an insurance agent or broker familiar with manufacturing companies and, in particular, an agent familiar with your type of operation. Ask other manufacturers in your vicinity to recommend an agent.

To guard against serious losses from theft, fire and any other misfortunes, manufacturers need an insurance package designed specifically for the firm. A basic plan might include:

**Property Insurance** Covers damage to the premises, equipment and inventory. Coverage can be obtained for all risks on specified perils such as fire, explosion, wind, riot or smoke.

**Liability Insurance** Protects the firm from financial loss due to any claims of bodily injury, personal injury, environmental damage, or property damage sustained by customers or others on the business premises or during business-related activity.

**Business Interruption Insurance** Compensates for revenue lost during a temporary halt in business caused by fire, theft or illness.

**Crime Coverage** Pays for losses due to vandalism, burglary, robbery and employee dishonesty.

**Fidelity Bonds** Guarantees against loss from embezzlement on specific employees with access to cash receipts or any other company funds.

**Automobile Insurance** Covers both physical damage and liability for company-owned vehicles or cars used for business.

**Business Owner's Life Insurance** Often business partners will purchase life insurance on each other's life. In the event that one partner dies, the other partners will have the funds to purchase all of the business. Lenders sometimes require insurance in favour of the lending agency if a term loan is made. Some businesses have insurance on key employees whose death would cause hardship to the business.

**Special Coverage** You may need special coverage for such things as computer data bases.

#### **Other Government Insurance Programs:**

**Health Care Insurance** Alberta Health provides a health care plan for all Alberta citizens. The Health Insurance Premiums Act and Regulations state that all employers with five or more eligible employees (owners and partners included) are required to form an employer group for payroll deduction medicare premiums. An employer with fewer than five eligible employees may form a designated group on a voluntary basis but once formed, must follow the regulations as they apply to an employer group.

Once a group is in existence, the employer must cover all eligible employees and make the necessary monthly payroll deductions. The rates are not reduced for group coverage. Employers are under no obligation to pay a portion of the premium unless they wish to do so as an employee benefit.

For further information, contact:

**Alberta Health**

10025 Jasper Avenue  
Edmonton, Alberta  
T5J 2N3  
phone: 427-1400

2nd Floor, McLaws Building  
407 - 8 Avenue S.W.  
Calgary, Alberta T2P 1E5  
phone: 297-5120

**Workers' Compensation Board** Manufacturers in Alberta are covered by the Workers' Compensation Act. This act provides for the compensation of workers who are injured in the course of their employment.

To avoid possible penalties, employers should contact the Workers' Compensation Board in order to open an account within 10 days of employing workers.

**Workers' Compensation Board**

Box 2415  
9912 - 107 Street  
Edmonton, Alberta T5J 2S5  
Phone. 498-4000

132 - 16th Avenue N.E.  
Calgary, Alberta T2E 1J5  
Phone: 297-3460

# Market Feasibility

## Chapter Three

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### Total Market

The ability to produce an item that consumers want at a price they will pay is the key to starting a manufacturing enterprise. For additional information on marketing, *Marketing for a Small Business* is available at no charge. Successful marketing starts with you, the owner/manager. The better you know your product, your market, your customers and your competition, the better your chances of success.

Before planning production, answer the following questions:

- Who is your customer?
- Where is your market?
- Why will your product be bought?
- At what stage of development is the market?
- Are there seasonal aspects to your market?
- What is your market share? Year one? Year two?

The very first step in any market feasibility plan is to determine how much of the product is really wanted. If the product is already on the market, then information on past and future expected sales is very helpful. If the product is new, then sales of a similar product might provide a starting point. It is also helpful to determine what area of the market the product will supply.

### For Example

Market	Fill in %	Volume
Consumer	_____	%
Industrial	_____	%
Wholesale	_____	%
Retail	_____	%
Government	_____	%
International	_____	%
Total		100%

To help estimate these percentages, use the following sources:

- Search bulletins on imported products
- Call wholesalers for volume and dollar figures
- Call retailers for volume information
- Ask people who want the product to find out their volume purchases and frequency

Another factor to consider is any trend or outside influence which may create an opportunity or pitfall. Some questions to consider include:

- What trends are important to your business?
- Will changes occur in the make-up of the population?
- Are changes in the market due to economic conditions, technological advances or other factors?

- Will any of the following influence your business?
- Banking policies
- Government departments
- Changes in legislation
- Publicity for the industry
- Consumer action groups

If you are considering the international markets, then you should consider the following:

- Is the product competitive?
- Are profits sufficient?
- Are resources available?
- Do economic, political and cultural differences pose any problems?
- Is the domestic market fully developed?

## ***Market Share and Customers***

After you have determined the total market, you should decide how much of the total you are able to supply. This depends largely on the nature of the product and the number of competitors. If your product is new and you have no direct competitors, then your goal may be to supply the total market. However, as is often the case, if you have competitors, you must decide what portion of the market will be your target.

To define your market share, research how the final customer uses your product. For example, consumer-related goods require different advertising, promotion and distribution than industrial related products. You should now identify any major customer groups and aim your product at these groups.

To market your product successfully you should develop a picture of your customer. Research how the customer sees your product and its benefits. To help you develop this picture, answer the following questions:

- Who purchases the product or makes the purchasing decision?
- How is the purchase made?
- What is the basic purchase?
- Why is the product bought?
- When is the product bought?
- Where is the product bought?

The answers will be different for consumer goods and industrial goods. When looking into this you should also identify potential areas of growth.

## ***Competition***

You must thoroughly examine the competition you face in the market place. To research this area, talk to existing and potential customers, examine competing products, attend trade shows and look at all available information on competitive products. You should also look at competitive firms outside your industry. For example, if you are in the service station business, you should examine supermarkets which also sell automotive supplies.

When comparing your product with a competitor's , check the following:

- Price
- Durability
- Maintenance
- Size range

## ***Distribution***

Now that you have reviewed the market and made a management decision regarding market share, the next question to consider is how you will get your product to the ultimate consumer. There are various channels of distribution to consider: direct sales through your own sales force; or indirectly through manufacturer's agents, brokers or wholesalers.

Regardless of which method of distribution you choose, there will be a cost which must be included in the price structure that you will prepare later. Look at how the product will be shipped and at what rate.

Also consider using special marketing, sales or merchandising techniques. Then weigh the benefits against the cost.

## ***Opportunities for Development***

Now you are ready to use all the information you've collected so far to decide how to proceed. When making this decision you should look at the four main ways a business can grow:

- **Innovation** - The most difficult and costly method to introduce a new product into a new market.
- **Strong Manufacturing** - New product development for use in established markets.
- **Improving Existing Products** - More business from existing markets, usually the most immediate results at lowest cost.
- **Strong Marketing Organization** - New market development. Identify new markets for existing products.

Once you have reviewed all areas, you should forecast what you expect your business to do in the first year. Then set a realistic objective based on what you expect will happen, taking into account the changes you will introduce, as well as the inevitable competitive and industry-wide changes in the market. The difference between the forecast and your objectives is your planned growth. It should be compared to the market trend for the future (say five years) to determine its feasibility.

# Manufacturing

## Chapter Four

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### Labour Process Cost

You have already decided how much you are planning to sell. The next step is getting the plant and equipment needed to produce your product. This will require a detailed look at all the activities involved in turning raw materials into a finished product.

A variety of data is required and it should be prepared with care to ensure accuracy and up-to-date information.

Prepare a detailed listing of product specifications and scale drawings. This will help you determine the manufacturing processes involved and materials required.

Prepare a list which will show all the basic operations required to make the product. For example, cutting, welding, assembling, gluing and painting may be required to produce the item. A simple method is to prepare a sheet which shows the operation and expected time required to perform each step. If timing for one unit is too small, then use the time for one production run of a given number of units. A sample sheet follows:

Item: (Name of goods being produced)			Quantity: Y units	
Step	Operation	Time (hour)	Rate	Amount
1	Cut material	2.0	6.50	13.00
2	Lathe	1.5	7.00	10.50
3				
Total				23.50

In addition to the cost, the following information is needed to secure labour:

- Are special skills required to perform the tasks? If so, is the labour available locally or at the anticipated plant site? If not, where can the required labour force be found?
- Detail any planned labour training programs. Check if they are eligible for subsidized wages through Canada Manpower or Alberta Career Development and Employment.
- Will you consider any special incentive programs for the work force? Will a bonus system be used for extra production? A profit-sharing plan?
- Prepare a detailed plan for labour requirements and estimate rates for the next five years.

The following chart may be used to plan labour in the future:

**Plant Personnel**

Position	Year 1	Year 2	Year 3	Year 4	Year 5
Manager	20,000	22,000	25,000		
Foreman (for Unit 1)	15,000	17,000	18,000		
Foreman (for Unit 2)			17,000		
Grinder	10,000	11,000	12,000		
Assembler	10,000	11,000	12,000		
Assembler (Unit 2)			11,000		
Welder	20,000	22,000	24,000		
<hr/> Total					

You should also consider any government regulations regarding minimum wage rates. You must also decide whether to hire union or non-union employees.

## Raw Material Cost

Next, prepare a list of raw materials required to make the product. Estimate the amount of materials required for one unit or, if a unit is too small, the amount required for a larger standard such as one production run. A sample sheet follows:

Item:		Quantity: Y units	
Description	Quantity	Price	Amount
Stainless Steel	100 m	2.00	200.00
Screws	.8	.15	1.20
Paint (grey)	1 litre	4.50	4.50
Total			205.70

It is also important to consider the following points:

- Where will the raw materials be acquired? It may be useful to prepare a list of the various sources for each item showing the price, delivery and any special features. A suggested list follows:

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### RAW MATERIAL SOURCE LIST

Material	Source	Price	Delivery	Special Features
1. Stainless Steel	Kuny Steel P.A.G. Steel	\$100/sq. metre \$105/sq. metre	2 weeks min. 2-3 weeks	Meets all specs. Provides credit
2. Paint	Rife Ltd.	\$4.50/litre	Immediate	High quality

- Prepare plans for alternative sources. You may be unable to acquire the materials from your main sources, so identify an alternative supplier who could fill the order; include cost, delivery and quality factors.
- Are volume purchase discounts available? Be careful in this area because your entire requirement may be only a small volume to the supplier. If the supplier runs short, you may be the first manufacturer cut off. On the other hand, purchasing from specific suppliers might ensure supply, but there may be no volume discount. Ask the supplier if there are minimum volume requirements.

- If using a depleting resource, are there any government regulations?
- What allowance must be made for processing waste and other shrinkage?
- Check other environmental constraints.
- Provide a list of miscellaneous shop materials that you require. Ensure all such supplies have been included in costing calculations.
- Do any of the materials have special storage requirements? Do any chemicals need to be stored in a fireproof area or do they deteriorate in storage?
- Is freight included in the price? If not, what will be the cost for transportation to the plant?

## ***Equipment***

Now examine the production process and provide details of required equipment including cost, any taxes, freight and installation charges.

As modern equipment is expensive, you should decide whether to (1) purchase new equipment, (2) purchase used equipment, or (3) lease the equipment.

Look at each alternative in terms of cost, interest charges for financing, and taxation. Please refer to *Financing a Small Business* booklet for more information on this topic.

You should also consider the various types of machines and again determine the cost, mechanical advantages, delivery time and serviceability. Choose the right equipment; it may not be necessary to purchase the top model if a less costly model will perform the same functions.

## ***Plant Layout***

Having looked at the labour and equipment requirements, the next step is planning the layout of the building required to make the product. Include restrooms, receiving areas, raw material storage, finished product storage, office space, parking, and the manufacturing area.

Designing a layout is a major undertaking, and requires time and considerable preparation. The results derived from a good layout or a new layout are sometimes phenomenal. Lower materials handling costs, less travel for materials, more convenient and efficient work places - can all result from a well-planned layout which permits production to flow with a minimum of friction.

The small plants of today are the medium plants of tomorrow. This type of growth is gradual and constant. Careful planning for the addition of machines and work places often increases the volume that can be produced within existing space.

Most small plants rely on a minimum number of processes. Thus, a change to any part of a process can affect the competitive position of the company. In addition, plant layouts are necessary when considering new product lines, new buildings or just to cut costs through efficient operations.

Many small plants have only one or two production lines. In this case it is more economical to have the processes and machines arranged in the sequence of their use so materials move directly from one machine to the next; from receiving to shipping areas.

#### **Advantages of a Production Line:**

- Reduced processing time
- Lower handling costs
- Easier material scheduling
- Lower inventory of materials in process
- Tighter control over operations
- Lower unit cost

#### **Disadvantages:**

- Ideally suited to a high and constant level of production
- A large investment for equipment and a higher rate of production may be required to make a profit
- Could lead to price cutting in a tight market
- Tight supervision is required because any machine failure may shut down the entire production line
- A new product may mean another production line

The other type of layout arranges machines according to process or type, or groups them according to production lines. This type of layout is suited to job-lot manufacturing because of its flexibility, producing a wide variety of products with the same equipment.

#### **Advantages of Job Lot Production:**

- Flexibility
- Ease of new product introduction
- Production flow

#### **Disadvantages:**

- Routing and scheduling problems
- Higher materials handling costs and space for storage of materials-in-process
- Operations control is harder, can cause delays
- Cost control is difficult

When the disadvantages (particularly lack of flexibility the high initial costs and the higher production volumes) are overcome, practice favours the production line type of layout because it is most efficient. There are many job-shop situations, however, where the line-type of layout is not feasible or economical.

Many companies combine the two types of layout under one roof. Often, it is not practical to change completely but it can be done for one or two lines that account for a large percentage of the total output. Thus the company retains all the flexibility of its job-shop facilities and gets the benefit of the lower cost of the straight-line production on a greater part of its total output.

There are many ways which machines, work benches and other equipment can be arranged to permit easy movement. However, only certain types of equipment, such as manually operated or self-contained electrical equipment is easily moved about. One company mounts its presses on skids so that they can be moved by fork-lifts; another puts its movable equipment on castors. Equipment mobility has the advantages of a product-type layout and at the same time retains the flexibility of the process-type layout.

If a company is planning a change in layout, there are costs which must be offset before making the changes. Some of these costs are:

- Planning cost of an outside consultant
- New equipment costs including delivery
- Structural changes or new construction
- Utility changes
- Moving machinery costs
- Indirect cost, such as employee time

Whether starting or expanding your plant, you should know your present and future space requirements. When planning your layout, check the following:

- Elements of the plan which are the most expensive to change, for example, heavy equipment
- Does location of the heavy equipment limit the direction of expansion?
- Location of basic input and outgoing areas
- Growth of each element of production
- Planned expansion of plant and required equipment
- Lines of material flow

Develop an ideal layout for your goals. As changes occur, revise the layout or make all future moves conform as closely as possible to your ideal layout.

You are ready to adapt that layout to the reality of buildings with certain structural and design limitations. This may prevent you from realizing your ideal layout, but with ingenuity, resourcefulness and compromise, you may be able to develop a similar plant at a realistic cost.

You are finally ready to prepare the layout. First, get accurate drawings of all buildings and other facilities to be used. Pay particular attention to any structural features which may limit your planning. If multi-floor structures are involved or you have to move any heavy equipment, be sure that floor load capacity is sufficient. Have it checked by a qualified engineer. If the building was constructed recently, you may be able to obtain the original drawings, but you should still check all critical measurements as changes are sometimes made during construction. If you are designing or building your own plant, then you can tailor the building to your requirements. In either case, check all utility outlets as it is necessary to know their exact locations for future planned moves.

To save time in planning the layout, use the following aids:

- Overlays: Tracings made over other tracings or drawings of the building.
- Templates: Two-dimensional representations of machines showing dimensions and other equipment or space requirements.
- Scale models: Provide maximum visual aid.

**There is only one secret to low-cost layouts, careful planning and detailed checking.**

Get critical comments before you make a change or implement a plan. It is cheaper to get comments before a final decision is made and definite plans are implemented. You may also want to develop alternative plans. If so, consider the advantages and disadvantages. Also, prepare cost estimates for each plan and production costs under each alternative.

The following check-list shows various area and service requirements which may be useful to evaluate your layout:

### Facilities Layout Checklist

#### Criteria

1	Market Volume		
2	Market Duration and Cycles		
3	Market Sequences and Variations		
4	Product Recycling and Repair		
5	Number of Parts		
6	Inventory		
7	Process Charts (Material Flow)		
8	Assembly Charts (Material Flow)		
9	Work Area		
10	Storage Area		
11	Service Area		
12	Flexibility		
13	Supervision		
14	Housekeeping		
15	Security		
16	Packaging		
17	Repair and Recycling		
18	Shipping and Receiving		
19	Vehicle Service		
20	Painting		
21	Curing		
22	Material Processing		
23	Metal Fabricating		
24	Working Conditions		
25	Personnel Movement		
26	Training		
27	Tool Room		

#### Services

1	Lighting		
2	Heating		
3	Ventilating		
4	Power Electrical		
5	Power Air		
6	Fire Protection		
7	Maintenance		
8	First Aid		
9	Rest Room		
10	Lunch Room		
11	Clearances Height		

## *Rent or Purchase Facilities*

As a result of today's increasing land and building costs, many businesses must decide carefully whether to rent or buy their facilities. In many cases, manufacturers have purchased their buildings which, if sold, would realize substantial increases in property values. However, most manufacturers are not in the real estate speculation business, and do not purchase property. Some manufactures have failed because their capital was tied up in buildings when it could have been better used in the business itself.

If you decide to purchase your building, once you eventually want to sell your business, it might be difficult to find a buyer with enough capital for both the business and the building.

If you put money into a building of your own, that money should bring you an income just as if you had invested it elsewhere. Charge your business with either rent or interest, maintenance, insurance, depreciation and other expenses of owning a building. If you do not, the business' net profit will not, in fact, be all profit.

If you rent your building, be sure that you can stay in that location if the business proves successful. At the same time, you should be free to move after a reasonable length of time if the location does not prove satisfactory. A short-term lease with option to renew is the best way to arrange for both these possibilities.

Often it is a good idea to have a lawyer or real estate person familiar with lease agreements check your lease. These people may help you tailor a fair contract or make useful suggestions on available options. If you are borrowing money from a lending institution, the loan officer will probably want to examine the lease. Do not sign a lease if financing of equipment, supplies, etc. has not yet been approved.

Before signing a lease, check it thoroughly. Notice details such as:

- Can built-in equipment and fixtures be installed and removed?
- Who takes care of plumbing, electrical or air conditioning repairs?
- Who is responsible for maintenance and supplies?
- Who is responsible for alterations?
- Who is responsible for payment of utilities?
- Who is responsible for insurance on the buildings and properties, including liability insurance?
- Can all or any part of the property be sublet?
- What is the liability in case of lease default?
- What are the common area charges?
- Is there potential for expansion?

## *Build Your Facilities*

Although it is usually not feasible for a small manufacturer, you have the option to build your own plant. This is very costly but you end up with a plant specifically designed for your business.

First determine the cost by adding the costs of the plant including land, design, engineering, construction, heating, lighting, sprinkler system, parking, fencing and landscaping.

If the land is not fully serviced, you will also need to estimate the cost of installing services to the plant. These services include domestic and processing water, fire fighting water (to underwriters' standards), domestic sewage system, plant effluent system, storm sewers, and other services such as hydro, telephone and natural gas. You should also consider plant protection, access roads or rail spur, and pollution controls.

All construction specifications must meet provincial construction regulations.

## **Plant Location**

Plant location should be selected using three main criteria: region, community and plant site.

Regional Factors	+	Community Factors	+	Site Factors	=	Plant Site
Source of raw materials		Attitude		Land site		
Labour availability		Facilities		Building		
Transportation Costs		Sites		- Lease/Buy		
- In & Out				Municipal by-laws		
Climate				Site services		
Operating Costs						
Capital inducements						
Proximity of markets						

The choice of location will influence the company's ability to raise debt financing (rent or erection) and the quality of labour available.

A number of factors are used to determine the region of your plant location. You must consider basic production factors such as source of raw materials, labour availability, transportation, fuel, power, water, climate and overall operating costs. Other factors such as proximity of markets, existing plants, and capital inducements from municipal, provincial or federal government agencies should also be considered.

Once you have selected a suitable region, then choose the community. There may be dozens of communities within a 100 or 200 mile radius. Consider the same factors you used when you chose the region, when selecting a community; and also look at community attitude, facilities and industrial sites.

Now select a specific site. Assess the following factors: land site; leasing, buying or building a plant facility; municipal bylaws; site services; and the general appearance of the location.

Statistics Canada publishes a series of booklets with statistics for various businesses and problems. Manufacturers can obtain helpful publications with information on:

- Size of market estimates and market share
- Your competition (domestic and foreign)
- Customer profiles
- Your costs and those of similar firms
- Trends in employment
- Price change monitoring
- Use of escalation clauses in contracts

**Statistics Canada  
User Advisory Services**

Park Square  
10001 Bellamy Hill  
Edmonton, Alberta T5J 3M6  
Toll Free 1-800-282-3907  
Phone. 495-4634

Harry Hays Building  
Room 245, 220-4th Avenue S.  
Calgary, Alberta T2P 3C1  
Phone: 292-6717

A confidential business locations counselling service is available from the Small Business and Industry Division, Alberta Economic Development and Tourism:

6th Floor, Sterling Place  
9940 - 106 Street  
Edmonton, Alberta T5K 2P6  
Phone. 427-5267

The service provides information on:

- advantages of locating a business in Alberta
- critical factors for evaluating a business location
- the correct business climate
- economic profiles of cities, towns and villages
- leads on businesses for sale
- availability of commercial/industrial land and buildings

### ***Overhead Costs***

When you determine your product cost and final selling price, overhead (which is all costs except direct labour and material) must be included in your calculations. Overhead includes general supplies, utilities, management and clerical salaries, interest expense, insurance, telephone, taxes and depreciation. List all your overhead expenses and then classify each expense into categories such as selling, administration and operating.

#### **For Example:**

Manager's salary	\$1000 per month	Operating
Driver	\$100 per week	Selling
Janitor	\$ 50 per week	Administration
Telephone	\$ 50 per month	Operating
Rent	\$1000 per month	Operating

If you are starting a small manufacturing plant, use actual figures whenever possible. However, expected costs can be substituted if they are reasonable. For a manufacturer already in business, the figures should be available from the latest income statement.

## **Interest Expense**

Part of the overhead figure is called interest expense; it represents the cost of borrowing funds. A simple method for calculating the amount to be borrowed and the interest expense is shown in the example below.

Estimated costs of plant and equipment	\$200,000
Estimated cost of required raw material stock	30,000
Estimated finished goods inventory	25,000
Estimated value of sales on accounts receivable for the period of credit	10,000
<hr/>	
Total capital requirements	\$265,000
Less estimated personal money invested	75,000
<hr/>	
Estimated amount to be borrowed	\$190,000

When you know the amount to borrow, a telephone call to your local financial institution will provide information on repayment terms, interest rate and proposed repayment schedule. Usually the repayment figure includes principal plus interest. The interest expense portion can be estimated by you or the financial institution.

## **Depreciation**

Allowance must be made for the cost of using buildings, machinery and equipment. These all have a fairly long life expectancy, but over time lose value through age, wear or obsolescence. Depreciation (also known as capital cost allowance) allows for the loss of value of fixed assets and is a cost of doing business. Depreciation should be included when calculating expenses. While depreciation is an overhead expense, it is usually shown separately on the income statement.

There are several methods used to calculate depreciation, but the simplest and most commonly used is the declining balance method. With this method, an equal percentage of the declining value of the asset is deducted each year, over the life of the asset. Revenue Canada - Taxation provides depreciation rates on various equipment and buildings.

If, for example, you purchase a one-ton truck for \$10,000, depreciation is based on the Revenue Canada rate of 30%. Depreciation expense is as follows:

$$\begin{aligned} \text{First year depreciation: } & \$10,000 \times 30\% = \$3,000 \\ \text{Cost on book } & \$10,000 - \$3,000 = \$7,000 \end{aligned}$$

$$\begin{aligned} \text{Second year depreciation: } & \$7,000 \times 30\% = \$2,100 \\ \text{Cost on book } & \$7,000 - \$2,100 = \$4,900 \end{aligned}$$

$$\begin{aligned} \text{Third year depreciation: } & \$4,900 \times 30\% = \$1,470 \\ \text{Cost on book } & \$4,900 - \$1,470 = \$3,430 \end{aligned}$$

In addition to the allowable annual rates, the federal government has an investment tax credit plan. All new equipment used for manufacturing or processing is allowed a further 7% tax credit for depreciation, calculated and deducted from the taxes payable. Some areas of Alberta are eligible for a 10% tax credit. For more detailed information on this tax credit contact Revenue Canada.

## **Total Overhead**

Now all operating, selling, administration, interest and depreciation costs can be accurately estimated, and a total figure for overhead expenses can be calculated. By dividing the overhead total by planned production, you will arrive at an average overhead cost per unit.

This overhead figure is approximate and is based on the planned production forecast. If the production forecast is not reached then the overhead cost per unit will increase. Since accurate cost figures are essential, the overhead cost calculation should always be closely monitored. As new production figures and new cost figures become available, new costings should be determined.

Example: Overhead costs per year at \$6,000

If planned production is 10,000 units,  
overhead cost per unit is .60

If production drops to 8,500 units,  
overhead cost per unit is .706

If production increases to 12,000 units,  
overhead cost per unit is .50

## **Determining Price**

When doing your market research you should compare competing products. This comparison will soon show you what the market price for your product is. You should also analyze your competitors' advantages in regard to price. You can then begin to establish a price range.

You must also take into consideration all product costs when you set your price. Although this may sound obvious, many businesses fail or have poor financial results as a direct result of omitted costs. If you have several products, some may contribute to profit while others will not. You must identify the products which are losing money.

Previously in this handbook, we identified the major unit cost components; direct labour, direct material, and overhead. Added together, these represent total cost per unit.

This total cost figure is likely an underestimate of the true total direct cost. Intangible costs such as machine set-up, idle time and coffee breaks cannot always be calculated and have real implications. If these factors have not been considered, then a miscellaneous element must be added to the costing calculations before determining price.

An example of how to calculate true total cost per unit follows:

Direct labour per unit	\$2.40
Materials per unit	.80
Overhead per unit	.20
Miscellaneous per unit	.10
Total Unit Cost	\$3.50

Arriving at a figure for this miscellaneous factor is difficult. It is best calculated by you since you know how efficiently your factory runs.

You can now determine a price for your product, knowing how much you must charge per unit of output to recover direct labour, direct material, overhead, a safety cost for miscellaneous unpredictable costs plus sufficient profit to provide you a reasonable rate of return on your investment.

# Financial Analysis

## Chapter Five

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Finally you are ready to determine whether you have made, or will make a profit after paying expenses. Having figured out the total cost and the amount of money required to start or expand your business, you can determine the financial feasibility of your plans. If the cost exceeds the revenue (thus no profit), a decision will be required. As many small businesses have difficulty making a profit in the first few years, you will require careful planning, good management and financial assistance to carry the firm over a period of loss. You may also decide to invest your money in stocks, bonds or guaranteed investment certificates, rather than putting in long hours for an uncertain return from your own small business.

The figure which ultimately represents profit is net profit after taxes. To help determine the profitability of your plan, use the following criteria and schedules:

- Operating expense schedule
- Capital cost of fixed assets
- Initial working capital requirements
- Depreciation schedule
- Interest and principal schedule
- Pro forma profit and loss and cash flow schedule  
(see below for example)

### Cash Operating Expenses

#### Selling and Administration

Salesman	\$5,000
Clerk	4,000
Janitor	2,500
Driver	4,000
Total	<u>15,500</u>

#### Operating Expenses

Manager	10,000
Telephone	600
Electricity	6,000
Rent	12,000
Miscellaneous	2,000
Total	<u>30,600</u>
	<u>\$46,100</u>

### Capital Costs of Fixed Assets

Lathe	\$25,000
Benches	2,000
Tools	5,000
Leasehold improvements	<u>7,000</u>
	<u>\$39,000</u>

**Initial Working Capital Requirements**

Inventories	\$25,000
Raw materials	5,000
Finished Goods	30,000
Accounts Receivable	<u>25,000</u>
	<u><u>\$55,000</u></u>

**Depreciation**

(Assume all items at 20% rate)

	Expense	Balance
Year 0	-	\$39,000
1	\$7,800	31,200
2	6,240	24,960

**Interest and Principal Schedule**

Loan of \$100,000 at 12% for 5 years \$2,210/month

Year 1	Payment	Interest	Principal
	\$26,520	12,000	14,520

**Pro Forma Profit and Loss and Cash Flow**

	Year 1	Year 2
Sales	\$400,000	
Cost of Goods Sold	300,000	
Gross Profit	<u>100,000</u>	
Cash Operating Expenses	46,100	
Interest - Term Loan	12,000	
- Overdraft	2,000	
Depreciation	7,800	
Total Expenses	<u>67,900</u>	
Net Profit before Taxes	32,100	
Income Tax	<u>7,100</u>	
Net Profit after Taxes	25,000	
Depreciation	<u>7,800</u>	
Cash Flow	32,800	
Repayment of Principal	(14,520)	
(Overdraft)/Bank Balance	<u>\$18,280</u>	
Cash Flow	\$18,280	

## *Financing*

Alberta Economic Development and Tourism has prepared another handbook in this series entitled *Financing a Small Business*. It is a guide on how to arrange proper financing for a business in Alberta. It is available free on request. Since financing is such an important aspect of manufacturing, it would be appropriate to discuss it briefly here.

It can be difficult to arrange financing for any business, especially at the outset. Equipment, raw material inventories, and operating cash usually require large sums of money. When commercial lending institutions analyze a new manufacturer, they study management, past experience, type of industry and specialized machine requirements. The need for specialized equipment creates a problem because if foreclosure becomes necessary, the lender generally has to discount the equipment heavily to recover cash from it. Each individual loan for a business is considered on individual merit and the risk involved.

In rare instances, inventory will be financed by lending institutions up to 65 per cent of the value of the inventory. When inventory advances are made, there is usually a ready market for the goods, assuming they are not perishable or subject to early obsolescence. In most cases of inventory financing, good rapport has been established over a period of time between the lender and the borrower.

When starting a manufacturing business, there are some financing rules that should be observed. A new business should minimize its fixed capital outlays to the greatest extent possible.

Lease equipment instead of purchasing it. Although this policy may appear more expensive over the long run, it means that the business will have more money available for current expenses and purchasing inventory. Money used for working capital can be recaptured quickly through inventory turnover. Money sunk in fixed capital assets is harder to retrieve. Consider financing fixed expenses such as leasehold improvements, cash registers and motor vehicles. This leaves your cash resources available for current operating expenses and inventory purchases.

Plan your financing requirements well ahead. It is important to approach your financial institution early. A lender does not want to be approached at the last minute with a crisis situation such as a payroll you are unable to meet. Be prepared when you go for a loan. Present your banker with a written plan describing your intentions and business prospects. Prepare a cash flow or budget (as described in the handbook *Financing a Small Business*) which demonstrates your ability to service debt.

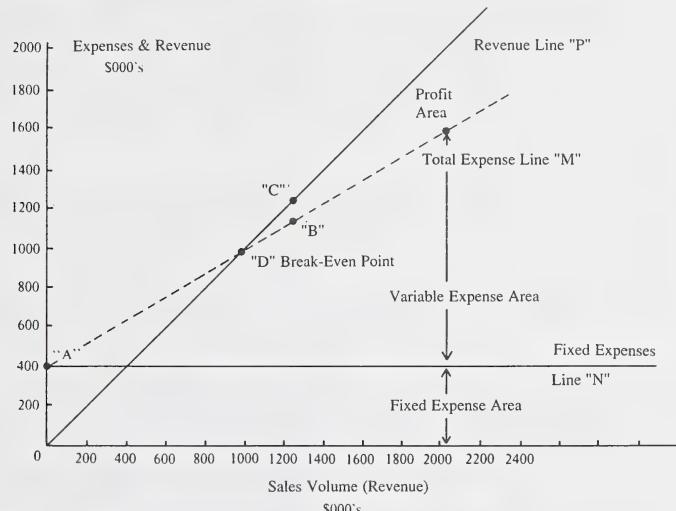
Demonstrate to your banker that you have the business well under control. Keep the financial institution informed of any significant developments in your business. Provide financial data regularly. Then, when a problem occurs, reasonable solutions can be found if the businessperson is honest and presents a plan to tackle it. It is to your advantage to develop a good relationship with your banker.

Ask business acquaintances about the financial institution they use. It is important to deal with an institution that will be interested in your business and will sympathize with your aspirations. There are many sources of financing for a business in Alberta. Building a business on a sound financial base is one of your most important jobs.

## Break-Even Analysis

All sales forecast figures are estimates; uncertain at best. Small manufacturers should know approximately what cost changes can be expected to coincide with volume changes. They must also know what levels of production and sales volume are necessary to cover expenses or make a profit. A break-even analysis will help you find the point where revenues and costs will be equal. At this volume, there is neither profit or loss.

An example of a break-even analysis is shown below:



### Step 1:

On the horizontal axis mark off a scale that represents sales volume. On the vertical axis mark off a scale representing revenue and expense items. Draw fixed expense line "N" which represents fixed expenses of \$400,000 that does not change over various level of sales.

### Step 2:

Plot point "B" as determined by the total of fixed and variable expenses on the vertical axis (\$1,120,000) and total sales volume on the horizontal axis (\$1,200,000). Draw line "M" starting at "A" and extending through "B". Line "M" represents the total expense line. Expenses both variable and fixed at any level of sales can be determined from it. Read upward from sales volume to the total expense line "M", and then over to the vertical axis where the dollar amount of expenses can be found.

### Step 3:

Plot point "C" which outlines the total sales volume and total revenue or \$1,200,000 on both scales. Draw revenue line "P" starting at "0" through point "C". The break even point is at point "D" where the total expense line "M" intersects revenue line "P". The break even point is where sales are \$1,000,000 covering total expenses of \$1,000,000.

The advantage of a break even chart is that you can readily see what level of sales are required to obtain profits. According to the example provided, if sales volume totalled only \$800,000, total expenses would be greater than total revenue, thereby indicating a loss. However, if sales volume amounted to \$1,800,000, total revenue would be much greater than total expenses, resulting in a large profit.

Another method to find your break-even point is shown below:

Selling Price	\$100.00 per unit
Less Variable Cost	81.50 per unit
<hr/>	
= Contribution Factor	\$18.50 per unit
(amount each unit contributes to reducing fixed costs)	

Minimum sales to cover total expenses:

$$\frac{\text{Overhead (fixed) Costs}}{\$18.50} = \frac{\$67,900}{18.50} = 3,670 \text{ units}$$

$$\text{Sales in dollars} = 3,670 \times \$100 = \$367,000$$

From the above, you can then prepare a break even market share figure.

Total Market = 20,000 units

$$\text{Break-even Market Share} = \frac{3,670}{20,000} = 18.35\%$$

The problem with using any analysis is that it depends on the accuracy of the basic data figures - the fixed and variable cost classification, cost estimates and volume estimates. **Errors in any one of the figures will cause mistakes and may result in erroneous decisions.** Therefore, the small manufacturer should continually review the way the costs are classified and accumulated, and be very careful in making cost estimates.

## Other Areas to Consider

### Chapter Six

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#### **Inventory Requirements**

Besides all the marketing and manufacturing items, the small manufacturer should review a number of other areas.

A good general rule is to maintain the lowest inventory levels possible. Inventories (raw materials and partially or fully finished goods) all consume cash, and the more cash tied up in inventory, the less working capital. However, raw materials are required to produce the goods, and some goods will be needed to fill sales orders.

The key is to develop an inventory control system to meet customer orders while minimizing the inventory costs. Two significant costs that should be considered are holding costs and ordering costs.

Holding costs include dollars in inventory; handling and accounting; insurance; inventory losses through damage, theft, deterioration or obsolescence; and physical storage space.

Ordering costs are connected with company purchases; selecting a supplier (time, evaluation), preparing the purchase order, following up if the order is lost, receiving and inspecting the order, placing stock, posting an inventory record, and preparing cheque for payment.

An effort must be made to coordinate sales and production (which then requires inventory). The following basic guide will help keep finished goods at reasonable inventory levels.

$$\begin{aligned} &\text{Estimated Sales} \\ &+ \text{Planned Finished Goods Inventory End of Month} \\ &- \text{Planned Finished Goods Inventory Beginning of Month} \\ &= \text{Production Requirements} \end{aligned}$$

The key to maintaining adequate inventories is the inventory control system. Proper materials storage can help reduce counting time and make value assessment more accurate. If possible, store all materials in bins or areas which will hold a given number of units. You might even attach a card or tag to the item of raw material or bin that contains the item. Indicate on the card when units are added or withdrawn. Then, when you require a count, you just total the cards instead of the actual items and you have a fairly accurate estimate of raw materials.

A sample Card is shown below:

ITEM:			
DESCRIPTION:			
ITEMS ON HAND:		DATE:	
COUNTED BY:			
RECEIVED AFTER COUNT	ISSUED AFTER COUNT		
Invoice	Quantity	Requisition	Quantity

## *Make or Buy Components*

Most small manufacturers buy a variety of parts from outside suppliers for use in their finished product. Often the manufacturer could make a part in the plant instead of buying it from an outside source. The manufacturer should determine whether the part is cheaper to produce or to purchase from a supplier.

The manufacturer should do an analysis to determine the in-house cost. First decide the volume you need then add all the associated costs, (including material, labour, overhead and all other final costs).

Once you have worked out your cost per unit, check whether it is less than your suppliers' price. You must also decide if any cost saving justifies investing more funds in special equipment or if those funds should be invested elsewhere.

## *Regulations*

Some manufacturers may be required to meet special license requirements. Since manufacturing covers a wide number of processes, your business may be required to meet government regulations. Two examples are The Clean Air Act and The Clean Water Act.

All manufacturers must ensure they are aware of any government act requiring them to meet standards and follow guidelines. For pollution control, contact Environmental Protection for details.

# Personnel

## Chapter Seven

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### Job Descriptions

Most small businesses enjoy a good reputation for employer/employee relationships. Obtaining and keeping good employees is a crucial element of any business. Good employees are an asset to your business. In a small manufacturing firm, the employees working, assembling or making a product will determine your productivity, profitability and product quality. Employee attitudes and ability affect your business and therefore, deserve attention.

Before an employee is hired, the manufacturer must consider the need, and determine if additional staff is required. Careful planning and study may reveal another way to accomplish the goal instead of hiring an additional person. A new employee creates costs in administration expenses, record keeping, benefits, advertising, interviewing and training and your own time.

Job specifications and performance standards, including a written description of each job should be used to:

- Select personnel
- Train those selected
- Prepare for future promotion
- Balance salaries and wages with responsibility and skill required

A sample job description follows:

#### **Welder**

Duties:	Work on roll equipment, pressure vessels, or on fabrication of steel and some nickel metals.
Responsible to:	Foreman
Requirements:	“B” pressure ticket; able to read blueprints and design layouts. Some experience required on heavy vessels.

In carrying out the duties of the job, each employee should take orders from, and be under the direct supervision of one person only to avoid conflicts of divided responsibility. Writing down the functions and lines of authority will help employees understand their responsibilities and the relationship of their work to others.

### Compensation

Wage and salary should be competitive with local firms, and adjusted to the difficulties and responsibilities of each job. The previous salary, the experience of the applicant, and the potential to add to company profits will help you set the salary level. For incentive or for special production requirements, you may offer a production/quality bonus system for over standard production.

Employees always look for security in their jobs. Be sure to encourage and be responsible to your staff. Instituting a pension plan for employees will help them feel more secure. A company's being small is no longer a barrier to the introduction of such plans through a reputable insurance agency. Building even a small permanent staff today demands inclusion of such employee benefits.

The role of employer calls for authority, imagination, tact and patience. The employer should approach all problems directly and openly. When personality conflicts arise between employees, the employer must deal with the situation promptly and in a non-partisan manner.

### ***Motivation***

The biggest task facing an employer is employee motivation. All people are motivated differently. Some employees work strictly for their wages. Others work as a team and enjoy doing a job well. Some employees thrive on additional responsibilities, while others do not. Similarly, some employees need constant encouragement and attention, while others require little attention.

### ***Accident Reporting***

If an accident results in a serious injury or has the potential to cause serious injury, the employer must immediately notify Alberta Occupational Health and Safety. Failure to do so may result in a fine under the Occupational Health and Safety Act. Proper accident investigation must be done to identify causes of the accident and to determine preventative strategies. An employee report should also be forwarded to the Workers' Compensation Board after all on-the-job injuries.

# Business Records

## Chapter Eight

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### **Cost Accounting**

The primary objective of good business records is to provide information that management can use to direct business operations. Good records are a very important tool for management decisions. A record system should tell a manager how efficient the business is, and point the way to cost reductions and other plans to increase profits.

A useful and effective system must be easy to understand, simple, flexible and efficient to operate. The system should be designed to provide useful information to management directly and economically. There is no advantage to a system that accumulates information just for the sake of accumulating data. Flexibility must be built into the system allowing the manager of a small manufacturing business to change and adjust to the needs of customers.

The key to most manufacturers' business records is the cost accounting system. The basic cost accounting needs of a small manufacturer are similar to those of a large business. However, a small manufacturer is not in a position to gather the amount of detailed information as a larger company might.

The manager of a small manufacturing plant should receive the following data from the cost accounting system:

- Results of past operations - costs per unit, costs per unit per department, costs per unit of service (if a service department).
- Information on cost changes from period to period and, if possible, comparisons of current costs to average costs.

The information may direct the manager to increased efficiency, increased production and increased profits.

Because information must be accurate and complete you should use an outside accountant or bookkeeper to set up your books. An accountant used to prepare the business' annual financial statements is in a good position to offer business advice. However, the businessperson should know the system and be able to prepare or extract information.

The cost accounting system should include journals, ledgers, cost records and control records. The number and kinds of journals and ledgers will depend on the volume of transactions and the type and volume of costing required.

Small manufacturers', records should contain the following:

- A record of all monetary transactions - sales and disbursements
- A record of petty cash and bank deposits
- A record of accounts receivable
- A record of purchases
- A record of accounts payable
- A record of inventory
- A record of equipment and description
- A record of payroll

## ***Monetary Transactions***

A small manufacturer may or may not sell directly, but will receive payment for orders and sales. If selling direct, the following approach will produce simple sales and cash receipts summaries:

Cash receipts	- cash sales - collections on accounts - miscellaneous
Cash on Hand	- money in the register - cheques - petty cash slips
Total	- total cash sales - total charge sales

The best method of payment is by cheque. This allows details to be recorded in the cheque book showing date, amount, payee and purpose. Every cheque should have supporting documents, such as an invoice, bill statement or payroll summary. Invoices should be marked paid, with the date paid and the cheque number. These documents should be put in a bills paid file.

Check all invoices and bill statements for items received against those ordered, for terms, cash discounts and prices. Take advantage of cash discounts and use your suppliers' credit, as you are usually allowed 30 days from date of statement until the funds are due. This is free credit and will allow you to use these funds for operating needs.

## ***Accounts Receivable***

Granting credit can involve considerable costs. Not only must you deal with the cost of bad debts, but there are expenses in setting up a credit system including bookkeeping, billing, credit investigation and collections. Many Alberta businesses find it easier and more economical to accept bank credit cards, such as VISA or MasterCard. Billing and collection activities are handled by the financial institution in return for a discount and cash is received for sales as soon as the sales draft is deposited.

Companies that handle their own credit accounts, should set a firm policy which outlines who is allowed to obtain credit, what the terms are, and how to follow up past-due accounts. Remember that slow-paying accounts tie up working capital. Also, people that owe your company money may shop elsewhere rather than go to your store and face a possible demand for payment on past purchases. Therefore, granting credit may prevent or diminish further sales to the slow-paying customer and may lead to losses.

No matter how careful you are in extending credit, sooner or later losses will occur. If your credit granting policy is too strict, it may lead to a loss of potential sales. Bad debt ratios are calculated in the following manner:

$$\frac{\text{Bad Debts}}{\text{Total Credit Sales}} = \text{Bad Debt Percentage}$$

This ratio should not exceed 2%, and slow accounts need to be immediately dealt with when overdue. The older a receivable becomes, the more difficult it is to collect. Eventually, after a certain point, it will have to be written off as uncollectible.

A system of aging accounts receivable should be devised that lists each account and its position. The aging process should be undertaken at least three or four times a year, and more often for a business with a large number of accounts. An example of a written accounts receivable aging system is given below:

Aging Accounts Receivable					
Current	Total	Current	30-60 Days	60-90 Days	3-6 Mos.
Boisvert Services Ltd.	600		600		
Cadence Chemicals	350				350
Davidson Welding	200			100	100
Dziaba Die & Tool	1,000	800	200		
<hr/>					
Rutherford Construction	500	500			
Slater Drilling	900	700	100	50	50
T & H Products	810	810			
Total	4,360	2,810	900	150	500
Percent	100%	64.4%	20.7%	3.4%	11.5%

Note: The names and amounts shown above are not intended to represent existing firms.

Alberta Economic Development and Tourism has prepared another handbook in this series entitled *Bookkeeping For a Small Business*. It provides more in-depth information on accounting methods and is available at no cost.

# Appendix

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## *Federal Authorities*

**Department of Consumer & Corporate Affairs Canada**  
10225-100 Avenue  
Edmonton, Alberta T5J 0A1  
Phone: 495-2491

Packaging Weights and Measures

**Commissioner of Patents**  
**Department of Consumer & Corporate Affairs Canada**  
Ottawa-Hull, Canada K1A 0C9  
Phone: (613) 997-1936

Copyrights Industrial Designs  
Patents

**Registrar of Trademarks**  
**Department of Consumer & Corporate Affairs Canada**  
Ottawa-Hull, Canada K1A 0C9  
Phone: (613) 997-1420

**Industry, Science & Technology**  
**International Trade Centre**  
540 Canada Place  
9700 Jasper Avenue  
Edmonton, Alberta T5J 4C3  
Phone: 495-2944

Export Assistance  
Industry  
Investment Canada

**Labour Canada**  
Room 302, 3rd Floor, Energy Square  
10109 - 106 Street  
Edmonton, Alberta T5J 3L7  
Phone: 495-2993

Labour Standards

**Canada Employment Centre**  
Room 260, Canada Place  
9700 Jasper Avenue  
Edmonton, Alberta T5J 4B8  
Phone: 495-2280

Employment

**Revenue Canada - Taxation**  
9700 Jasper Avenue  
Edmonton, Alberta T5J 4C8  
Phone: 423-3510

Income Tax

**Revenue Canada - Taxation**  
District Excise Office  
15th Floor, Park Square  
10001 Bellamy Hill  
Edmonton, Alberta T5J 4P5  
Phone: 497-6300

Sales and Excise Tax

**Revenue Canada - Taxation**  
Customs Operations  
8th Floor, 105 Street Building  
10242 - 105 Street  
Edmonton, Alberta T5J 4H8  
Phone: 495-3400

Customs

**Unemployment Insurance**  
**Commission**  
#260 Canada Place  
9700 Jasper Avenue  
Edmonton, Alberta T5J 4V8  
Phone: 420-2207

Unemployment Insurance

### *Provincial Authorities*

**Alberta Health**  
10025 Jasper Avenue  
Edmonton, Alberta T5J 2N3  
Phone: 427-1400

2nd Floor, McLaws Building  
407 - 8th Avenue S.W.  
Calgary, Alberta T2P 1E5  
Phone: 297-5120

**Apprenticeship Branch**  
**& Trade Certification**  
**Alberta Advanced Education**  
**& Career Development**  
4th Floor, 10050 - 112 Street  
Edmonton, Alberta T5K 2R4  
Phone: 427-3722

7th Floor  
855 - 8th Avenue S.W.  
Calgary, Alberta T2P 3P1  
Phone: 296-6457

**Cooperative**  
**Development Branch**  
**Alberta Consumer &**  
**Corporate Affairs**  
19th Floor  
10025 Jasper Avenue  
Edmonton, Alberta T5J 3Z5  
Phone: 422-3694

301 Centre 70  
7015 McLeod Trail South  
P.O. Box 5880, Station A  
Calgary, Alberta T2H 2M9  
Phone: 297-5700

**Corporate Registry**  
8th Floor,  
J.E. Brownlee Building  
10365 - 97 Street  
Edmonton, Alberta T5J 3W7  
Phone: 427-2311

3rd Floor, Canada Place  
407 - 2nd Street S.W.  
Calgary, Alberta T2P 2Y3  
Phone: 297-3442

**Employment Standards Branch**  
Alberta Labour  
#101, 10339 - 124 Street  
Edmonton, Alberta T5N 3W1  
Phone: 427-3731

Room 3300 Deerfoot Junction,  
Tower 3  
1212 - 31 Avenue N.E.  
Calgary, Alberta T2E 7S8  
Phone: 297-4339

**General Safety Services Division**

Alberta Labour  
#801, 10808 - 99 Avenue  
Edmonton, Alberta T5K 0G5  
Phone: 427-3680

Room 3312 Deerfoot Junction Tower 3  
1212 - 31 Avenue N.E.  
Calgary, Alberta T2E 7S8  
Phone: 297-4337

**Labour Relations Board**

Alberta Labour  
#905, 10808 - 99 Avenue  
Edmonton, Alberta T5K 0G5  
Phone: 427-8547

3rd Floor, Deerfoot Junction, Tower 3  
1212 - 31 Avenue N.E.  
Calgary, Alberta T2E 7S8  
Phone: 297-4333

**Mediation Services Branch**

Alberta Labour  
10808 - 99 Avenue  
Edmonton, Alberta T5K 0G5  
Phone: 427-8301

Deerfoot Junction  
#3304, 1212 - 31 Avenue N.E.  
Calgary, Alberta T2E 7S8  
Phone: 297-4347

**Workers' Compensation Board**

Box 2415, 9912 - 107 Street  
Edmonton, Alberta T5J 2S5  
Phone: 498-4000

132 - 16th Avenue N.E.  
Calgary, Alberta T2E 1J5  
Phone: 297-3460

## *Alberta Treasury Branches*

Branch	Address	Telephone
Airdrie	104 - 1st Avenue N.W.	948-5989
Andrew	5036 - 51 Street	365-3834
Athabasca	4910 - 50 Street	675-2258
Banff	317 Banff Avenue	762-8505
Barrhead	4909 - 52 Avenue	674-2241
Beaverlodge	209 - 10 Street	354-2236
Black Diamond	122 Center Avenue W.	933-4357
Bonnyville	4902 - 50 Avenue W.	826-3024
Bow Island	128 - 5th Avenue W.	545-2204
Boyle	5115 - 3rd Street	689-4099
Breton	4927 - 50 Avenue	696-3664
Brooks	219 - 2nd Street W.	362-3351
Bruderheim	Queen Street & 49 Avenue	796-3616
Calgary Main (Esso Plaza)	420 - 2nd Street S.W.	297-2009
Calgary Alberta Hotel	139 - 8th Street S.W.	297-6297
Calgary Brentwood	3630 - Brentwood Road N.W.	297-8164
Calgary Chinook Centre	1691 S. Chinook Centre 6455 MacLeod Trail S.W.	297-6503
Calgary Forest Lawn	3223 - 17 Avenue S.E.	297-6507
Calgary MacLeodVillage	4610 - MacLeod Trail S.W.	297-2831
Calgary North Hill	217 - 16 Avenue N.W.	230-6700
Calgary Sunridge	Suite 5, 2681 - 36 Street N.E.	291-2480
Calgary 6th Avenue S.W.	717 - 6th Avenue S.W.	297-6206
Calgary 17th Avenue	1110 - 17 Avenue S.W.	228-9952
Calgary 34th Avenue	2140 - 34 Avenue S.W.	297-7163
Camrose	4867 - 50 Street	672-3331
Cardston	24 - 2nd Avenue W.	653-3394
Caroline	5039 - 50 Avenue	722-3830
Carstairs	103 - 10 Avenue N.	337-3345
Castor	4913 - 50 Avenue	882-3110
Claresholm	115 - 49 Avenue W.	625-4451
Coaldale	1821 - 20 Avenue	345-2611
Cochrane	221 - 1st Street	932-3117
Cold Lake	703 Lakeshore Drive	639-3311
Consort	Main Street	577-3800
Coronation	5206 Victoria Avenue	578-4101
Crossfield	1214 - 16 Railway Avenue	946-4345

Daysland	5033 - 50 Street	374-3524
Didsbury	1820 - 20 Street	335-3386
Drayton Valley	5117 - 51 Street	542-4406
Drumheller	294 Centre Street S.	823-5161
Edmonton Main	10102 - 102 Avenue	429-9100
Edmonton Calgary Trail South	3361 Calgary Trail South	437-4333
Edmonton First EdmontonPlace	10665 Jasper Avenue	422-4800
Edmonton 118 Avenue	8804 - 118 Avenue	427-4171
Edmonton Hys Centre	11010 - 101 Street	423-3306
Edmonton Jasper Place	15548 Stony Plain Road	486-2224
Edmonton Killarney	12703 - 97 Street N.W.	473-1803
Edmonton Kingsway PSC	11541 Kingsway Avenue	455-5735
Edmonton Mayfield Common		
PSC	360, 10046 - 167 Street	484-5513
Edmonton Mayfield Square	10466 Mayfield Road	484-7117
Edmonton Millwoods	9251 - 34 Avenue	463-7577
Edmonton Palisades Square	12800 - 137 Avenue	427-7353
Edmonton Pepper Tree	12060 Jasper Avenue	427-7355
Edmonton Strathcona	8008 - 104 Street	439-4877
Edmonton Sun Life Place	10, 10123 - 99 Street	423-3058
Edmonton Terrace Plaza	4445 Calgary Trail S.	436-8333
Edmonton West Edmonton		
Mall	1434, 8770 - 170 Street	444-2027
Edson	320 - 50 Street	723-5571
Elk Point	4925 - 50 Street	724-3883
Fairview	11012 - 102 Avenue	835-4932
Falher	Railway Avenue & Main Street	837-2218
Forestburg	50 Street & 49 Avenue	582-3745
Fort Macleod	221 Macleod Blvd.	553-4444
Fort McMurray	9713 Hardin Street (Peter Pond)	743-7240
Fort Saskatchewan	9917 - 102 Street	998-5161
Fort Vermillon	Main Street	927-3781
Grand Centre	4817 - 50 Street	594-7149
Grande Prairie Main	9912 - 100 Avenue	539-7450
Grande Prairie Mall	193, 11801 - 100 Street	538-5225
Granum	310 Railway Avenue	687-3794
Grimshaw	5216 - 50 Street	332-4637

Hanna	232 - 2 Avenue W.	854-4404
High Level	10102 - 100 Avenue	926-2221
High Prairie	5201/03 - 49 Street	523-5201
Hinton	207 Pembina Avenue	865-2294
Hythe	10026 - 101 Avenue	356-3823
 Innisfail	 4962 - 50 Street	 227-3350
 Killiam	 5001 - 50 Street	 385-3751
 Lac La Biche	 10111 - 102 Avenue	 623-4446
Lacombe	5102 - 50 Avenue	782-3550
La Crête	Main Street	928-3777
Lamont	5130 - 50 Avenue	895-2261
Leduc	4809A - 50 Avenue	986-2226
Lethbridge, Main	601 Mayor Magrath Drive	382-4388
Lethbridge 6th Street	319 - 6th Street S.	381-5431
Lethbridge PSC	Suite 101, 1112 - 2nd A. Avenue	380-6686
Linden	104 Central Avenue E.	546-3993
Lloydminster	5008 - 49 Street	875-8901
 Magrath	 82 - 1st Avenue S.W.	 758-3345
Manning	10024 - 101 Avenue	836-3301
Mayerthorpe	4910 - 50 Street	786-2207
McLennan	1st Avenue & Centre Street	324-3975
Medicine Hat 2nd Street	536 - 2nd Street S.E.	529-3601
Medicine Hat Carry Drive	1 Carry Drive Plaza	529-3106
	93 Carry Drive S.E.	
Milk River	140 Main Street N.E.	647-3532
 Nanton	 2202 - 20 Street	 646-2207
 Okotoks	 41 Elizabeth Street	 938-7232
Olds	4901 - 50 Avenue	556-3232
Onoway	4809 - 50 Street	967-2201
Oyen	200 Main Street	664-3553
 Peace River	 9911 - 100 Avenue	 624-6174
Picture Butte	330 Highway Avenue	732-5611
Pincher Creek	769 Main Street	627-3304
Ponoka	5110 - 49 Avenue	783-3301
Provost	5013 - 50 Street	753-2247

Raymond	69A - Broadway Street N.	752-4511
Red Deer Main	100, 4911 - 51 Street	340-5130
Red Deer Riverside	4919 - 59 Street	340-5384
Redwater	4832 - 50 Avenue	942-4545
Rimbey	5037 - 50 Avenue	843-2291
Rocky Mountain House	4912 - 50 Avenue	845-2811
Rycroft	4635 - 50 Street	765-3624
Ryley	5101 - 50 Street	663-3513
St. Albert	1504 Tudor Glen Market	459-1221
	Gervais Road & St. Albert Trail	
St. Paul	4801 - 50 Avenue	645-4406
Sherwood Park Main	2001 Sherwood Drive	464-4444
Sherwood Park Wye Garden	1, 99 Wye Road	449-3636
Sherwood PSC	200, 222 Base Line Road	464-2217
Slave Lake	301 Main Street	849-3911
Smoky Lake	50 Wheatland Avenue	656-3833
Spirit River	4518 - 50 Street	864-3650
Spruce Grove	250 King Street	962-6000
Stettler	5007 - 50 Street	742-4466
Stony Plain	5014 - 50 Street	963-2214
Strathmore	137 - 2nd Avenue	934-5293
Sundre	304 Main Street W.	638-4312
Taber	5317 - 48 Avenue	223-8941
Thorsby	4816 - 50 Street	789-3885
Three Hills	211 Main Street	443-5571
Tofield	5120 - 50 Street	662-3773
Trochu	201 Main Street	442-4200
Two Hills	5002 - 50 Avenue S.	657-3391
Valleyview	4957 - 50 Avenue	524-3965
Vegreville	4931 - 50 Street	632-2340
Vermillion	5014 - 50 Avenue	853-5293
Viking	5211 - 50 Street	336-3209
Vulcan	212 Centre Street	485-2271
Wainwright	509 Main Street	842-3355
Westlock	10532 - 100 Avenue	349-4481
Wetaskiwin	5202 - 50 Avenue	352-7300
Whitecourt	5117 - 50 Street	778-2442
Wildwood	5115 - 50 Street	325-3837

## *Alberta Economic Development and Tourism Offices*

### **Edmonton**

6th Floor, 9940 - 106 Street  
Edmonton, Alberta T5K 2P6  
Phone: 427-3685

### **Medicine Hat**

Room 109, Provincial Building  
346 - 3 Street S.E.  
Medicine Hat, Alberta T1A 0G7  
Phone: 529-3630

### **Calgary**

5th Floor, 999 - 8 Street S.W.  
Calgary, Alberta T2R 1J5  
Phone: 297-6284

### **Peace River**

Bag 900, Box 3, 10122 - 100 Street  
River Drive Mall  
Peace River, Alberta T8S 1T4  
Phone: 624-6113

### **Camrose**

5005 - 49 Street  
Camrose, Alberta T4V 1N5  
Phone: 679-1235

### **Red Deer**

3rd Floor, Provincial Building  
4920 - 51 Street  
Red Deer, Alberta T4N 6K8  
Phone: 340-5300

### **Edson**

Room 204, Provincial Building  
111 - 54 Street  
Edson, Alberta T7E 1T2  
Phone: 723-8229

### **St. Paul**

Room 412, Provincial Building  
5025 - 49 Avenue  
St. Paul, Alberta T0A 3A4  
Phone: 645-6358

### **Grande Prairie**

Room 1401, Provincial Building  
10320 - 99 Street  
Grande Prairie, Alberta T8V 6J4  
Phone: 538-5230

### **The Business Line**

Metro Edmonton  
Phone: 422-9494

### **Lethbridge**

416 Stafford Drive S.  
Lethbridge, Alberta T1J 4C7  
Phone: 381-5414

### **Rest of Province**

Phone: 1-800-272-9675











3 3286 50158 9689



Telephone: (403) 427-3685  
The Business Line  
1-800-2729675



**Alberta Treasury Branches**  
Guaranteed Financial Services

Customer Service Line  
1-800-332-8383